

# Curriculum Vitae

## Anastasia Volovich

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### 1. Name, Position, Academic Department

Anastasia Volovich  
Professor of Physics  
Department of Physics  
Brown University

### 2. Address, Email, Date of birth

Department of Physics  
Brown University  
Providence RI 02912  
Phone: (401) 863 2622  
Email: [anastasia\\_volovich@brown.edu](mailto:anastasia_volovich@brown.edu)  
Date of birth: July 22, 1976, Moscow, Russia; US citizen

### 3. Education

Physics & Mathematics MIPT (Fiztech) correspondence High School #2, Moscow, 1990-1993 (distinction in mathematics)  
Mathematical College, Independent University of Moscow, Russia, 1993-1999  
B.A. & M.A., Physics: Moscow State University, Russia, 1993-1999 (highest honors, red diploma)  
Ph.D., Physics, Harvard University, 2002  
Advisor: Andrew Strominger  
Dissertation Topic: Holography for Coset Spaces and Noncommutative Solitons

### 4. Professional Appointments

Instructor in Mathematics, Physics & Mathematics High School #2, Moscow, 1995-1997

Visiting Scientist, LPTHE, University of Paris, Wint. 1998, Summ. 1998, 1999, 2001  
Assistant, Landau Institute for Theoretical Physics, Russia, 1996-1999  
Research and Teaching Assistant, Harvard University, 1998-2002  
Postgraduate Researcher, Kavli Institute for Theoretical Physics, University of California, Santa Barbara, Sep. 2002–Sep. 2005  
William D. Loughlin Member, Institute for Advanced Study, Princeton, Sep. 2005–Sep. 2006  
Richard and Edna Salomon Assistant Professor of Physics, Brown University, July 2006–June 2011  
Member, Institute for Advanced Study, Princeton, Jan.–Mar. 2011  
Program coordinator, Kavli Institute for Theoretical Physics, University of California, Santa Barbara, Apr.–Jul. 2011  
Scientific Associate, CERN, Aug. 2012-Aug. 2013  
Visiting Scientist, CERN, Aug 2013-present  
Associate Professor of Physics, Brown University, July 2011–June 2016  
Professor of Physics, Brown University, July 2016–present

**5. Academic Honors**

Blavatnik National Finalist, Blavatnik Foundation, 2016  
Simons Investigator in Physics, Simons Foundation, 2015  
Simons Fellowship in Theoretical Physics, 2011  
Early Career Research Award, Department of Energy, 2011  
Sloan Research Fellowship, Alfred P. Sloan Foundation, 2011  
Presidential Early Career Award for Scientists and Engineers (PECASE), Office of President of the United States and National Science Foundation, awarded in White House, 2008  
Career Development Award, NSF ADVANCE Program, Brown University, 2009  
National Science Foundation CAREER Award, National Science Foundation, 2007  
Richard and Edna Salomon Professorship, Brown University, 2006

William D. Loughlin Membership, Institute for Advanced Study, 2005

Van Vleck Award, Harvard University (for outstanding prospective student), 1998

Khoklov Prize, Moscow State University (for the best M. A. thesis of the university),  
Jan. 1999

Soros Foundation Fellowship foundation (for being an outstanding student), 1996-1998

Fellowship of Government of Moscow (for straight A grades), Moscow State  
University, 1995-1999

Prizes in school competitions and olympiads in mathematics, physics and figure  
skating, Moscow

## 6. Publications

Author of **70+ publications with ~4000 citations** according to inSPIRE database,  
2 papers marked with ●●● have 250+, 7 papers marked with ●● have 100+, and 17 papers  
marked with ● have 50+ citations.

### *b. Book Chapters: Lecture Notes*

1. ● “Lectures on superconformal quantum mechanics and multi-black hole moduli spaces,” arXiv:hep-th/9911066, with R. Britto-Pacumio, J. Michelson, A. Strominger, Cargese lecture notes, NATO Science Series C: Mathematical and Physical Sciences, vol. 556, chapter 6, pp 255-285, Kluwer Academic Publishers.
2. ●●● “Les Houches lectures on de Sitter space,” arXiv:hep-th/0110007, with M. Spradlin, A. Strominger, Les Houches NATO Advanced Study Institute, session LXXVI, chapter 6, pp 423-455, Springer.
3. “Light-cone string field theory in a plane wave,” arXiv:hep-th/0310033, with M. Spradlin, ICTP Spring School on Superstring Theory and Related Topics, lecture notes, Trieste, Apr. 2003, 44 pages.

### *c. Refereed Journal Articles*

4. “Three-block p-branes in various dimensions,” Nucl. Phys. B **492**, 235 (1997) [arXiv:hep-th/9608095].
5. “Domain walls in MQCD and Monge-Ampere equation,” Phys. Rev. D **59**, 065005 (1999) [arXiv:hep-th/9801166].
6. “Rarita-Schwinger field in the AdS/CFT correspondence,” JHEP **9809**, 022 (1998) [arXiv:hep-th/9809009].
7. “Holography for coset spaces,” JHEP **9911**, 013 (1999) [arXiv:hep-th/9905211], with R. Britto-Pacumio, A. Strominger.

8. “Two-black-hole bound states,” JHEP **0103**, 050 (2001) [arXiv:hep-th/0004017], with R. Britto-Pacumio, A. Strominger.
9. “Noncommutative solitons on Kaehler manifolds,” JHEP **0203**, 011 (2002) [arXiv:hep-th/0106180], with M. Spradlin.
10. ● “Vacuum states and the S-matrix in dS/CFT,” Phys. Rev. D **65**, 104037 (2002) [arXiv:hep-th/0112223], with M. Spradlin.
11. ●● “Superstring interactions in a pp-wave background,” Phys. Rev. D **66**, 086004 (2002) [arXiv:hep-th/0204146], with M. Spradlin.
12. ●● “Superstring interactions in a pp-wave background. II,” JHEP **0301**, 036 (2003) [arXiv:hep-th/0206073], with M. Spradlin.
13. ● “New effects in gauge theory from pp-wave superstrings,” Phys. Lett. B **548**, 111 (2002) [arXiv:hep-th/0206221]. with I. R. Klebanov, M. Spradlin.
14. ● “Tracing the string: BMN correspondence at finite  $J^2/N$ ,” JHEP **0305**, 022 (2003) [arXiv:hep-th/0210102], with J. Pearson, M. Spradlin, D. Vaman, H. L. Verlinde.
15. ● “Explicit formulas for Neumann coefficients in the plane-wave geometry,” Phys. Rev. D **67**, 086005 (2003) [arXiv:hep-th/0211198]. with Y. H. He, J. H. Schwarz, M. Spradlin.
16. “On light-cone SFT contact terms in a plane wave,” JHEP **0310**, 055 (2003) [arXiv:hep-th/0211220], with R. Roiban, M. Spradlin.
17. “Note on plane wave quantum mechanics,” Phys. Lett. B **565**, 253 (2003) [arXiv:hep-th/0303220], with M. Spradlin.
18. “On the S-matrix of type 0 string theory,” JHEP **0311**, 012 (2003) [arXiv:hep-th/0309148], with O. DeWolfe, R. Roiban, M. Spradlin, J. Walcher.
19. ●● “A googly amplitude from the B-model in twistor space,” JHEP **0404**, 012 (2004) [arXiv:hep-th/0402016], with R. Roiban, M. Spradlin.
20. ● “All googly amplitudes from the B-model in twistor space,” Phys. Rev. Lett. **93**, 131602 (2004) [arXiv:hep-th/0402121], with R. Roiban.
21. ●● “On the tree-level S-matrix of Yang-Mills theory,” Phys. Rev. D **70**, 026009 (2004) [arXiv:hep-th/0403190], with R. Roiban, M. Spradlin.
22. “Yang-Mills correlation functions from integrable spin chains,” JHEP **0409**, 032 (2004) [arXiv:hep-th/0407140], with R. Roiban.
23. “A pendant for Polya: The one-loop partition function of  $N = 4$  SYM on  $R \times S^3$ ,” Nucl. Phys. B **711**, 199 (2005) [arXiv:hep-th/0408178], with M. Spradlin.

24. “Two-loop partition function in the planar plane-wave matrix model,” *Phys. Lett. B* **603**, 239 (2004) [arXiv:hep-th/0409178], with M. Spradlin, M. Van Raamsdonk.
25. • “Dissolving  $N = 4$  loop amplitudes into QCD tree amplitudes,” *Phys. Rev. Lett.* **94**, 102002 (2005) [arXiv:hep-th/0412265], with R. Roiban, M. Spradlin.
26. • “All split helicity tree-level gluon amplitudes,” *Phys. Rev. D* **71**, 105017 (2005) [arXiv:hep-th/0503198], with R. Britto, B. Feng, R. Roiban, M. Spradlin.
27. “String theory in beta deformed spacetimes,” *JHEP* **0511**, 039 (2005) [arXiv:hep-th/0509036], with M. Spradlin, T. Takayanagi.
28. “Hidden beauty in multiloop amplitudes,” *JHEP* **0607**, 007 (2006) [arXiv:hep-th/0601031], with F. Cachazo, M. Spradlin.
29. • “Iterative structure within the five-particle two-loop amplitude,” *Phys. Rev. D* **74**, 045020 (2006) [arXiv:hep-th/0602228], with F. Cachazo, M. Spradlin.
30. •• “Dressing the giant magnon,” *JHEP* **0610**, 012 (2006) [arXiv:hep-th/0607009], with M. Spradlin.
31. • “Dressing the giant magnon. II,” *JHEP* **0703**, 020 (2007) [arXiv:hep-th/0611033], with C. Kalousios, M. Spradlin.
32. •• “Four-Loop Cusp Anomalous Dimension From Obstructions,” *Phys. Rev. D* **75**, 105011 (2007) [arXiv:hep-th/0612309], with F. Cachazo, M. Spradlin.
33. “Four-Loop Collinear Anomalous Dimension in  $N = 4$  Yang-Mills Theory,” *Phys. Rev. D* **76**, 106004 (2007) [arXiv:0707.1903 [hep-th]], with F. Cachazo, M. Spradlin.
34. “Dressing the Giant Gluon,” *JHEP* **0712**, 047 (2007) [arXiv:0708.0818 [hep-th]], with A. Jevicki, C. Kalousios, M. Spradlin.
35. “New Dual Conformally Invariant Off-Shell Integrals,” *Phys. Rev. D* **77**, 025018 (2008) [arXiv:0709.4665 [hep-th]], with D. Nguyen, M. Spradlin.
36. “Scattering of single spikes,” *JHEP* **0802**, 009 (2008) [arXiv:0710.2300 [hep-th]], with R. Ishizeki, M. Kruczenski, M. Spradlin.
37. • “Generating AdS String Solutions,” *JHEP* **0803**, 032 (2008) [arXiv:0712.1193 [hep-th]], with A. Jevicki, K. Jin, C. Kalousios.
38. ••• “The Two-Loop Six-Gluon MHV Amplitude in Maximally Supersymmetric Yang-Mills Theory,” *Phys. Rev. D* **78**, 045007 (2008) [arXiv:0803.1465 [hep-th]], with Z. Bern, L. J. Dixon, D. A. Kosower, R. Roiban, M. Spradlin, C. Vergu.
39. • “Leading Singularities of the Two-Loop Six-Particle MHV Amplitude,” *Phys. Rev. D* **78**, 105022 (2008) [arXiv:0805.4832 [hep-th]], with F. Cachazo, M. Spradlin.

40. “Exact solutions for N-magnon scattering,” JHEP **0808**, 095 (2008) [arXiv:0806.2466 [hep-th]], with C. Kalousios, G. Papathanasiou.
41. “Three-Loop Leading Singularities and BDS Ansatz for Five Particles,” Phys. Rev. D **78**, 085025 (2008) [arXiv:0808.1054 [hep-th]], with M. Spradlin, C. Wen.
42. “Three Applications of a Bonus Relation for Gravity Amplitudes,” Phys. Lett. B **674**, 69 (2009) [arXiv:0812.4767 [hep-th]], with M. Spradlin, C. Wen.
43. “Tree-Level Amplitudes in  $\mathcal{N} = 8$  Supergravity,” Phys. Rev. D **79**, 105018 (2009) arXiv:0901.2363 [hep-th], with J. Drummond, M. Spradlin, C. Wen.
44. “On Dyonic Giant Magnons on  $CP^3$ ,” JHEP **0907**, 006 (2009) arXiv:0902.3179 [hep-th], with C. Kalousios and M. Spradlin
45. • “Correlation Functions in Non-Relativistic Holography,” JHEP **0905**, 087 (2009) arXiv:0903.2455 [hep-th], with C. Wen.
46. “Factorized Tree-level Scattering in  $AdS_4 \times CP^3$ ,” JHEP **0909**, 049 (2009) arXiv:0905.4702 [hep-th], with C. Kalousios, C. Vergu.
47. “From Twistor String Theory To Recursion Relations,” Phys. Rev. D **80**, 085022 (2009) arXiv:0909.0229 [hep-th], with M. Spradlin.
48. “The Tree Formula for MHV Graviton Amplitudes,” JHEP **1007** (2010) 045 [arXiv:0907.2276 [hep-th]], with D. Nguyen, M. Spradlin, C. Wen.
49. “A Grassmannian Etude in NMHV Minors,” JHEP **1007** (2010) 061 [arXiv:0912.3705 [hep-th]], with D. Nandan, C. Wen,
50. •• “Classical Polylogarithms for Amplitudes and Wilson Loops,” Phys. Rev. Lett. **105** (2010) 151605 [arXiv:1006.5703 [hep-th]], with A. B. Goncharov, M. Spradlin, C. Vergu.
51. ”The Grassmannian and Twistor String: Connecting All Trees in N=4 SYM,” JHEP **1101** (2011) 038 arXiv:1006.1899 [hep-th], with J. Bourjaily, J. Trnka, C. Wen.
52. “Symbols of One-Loop Integrals From Mixed Tate Motives,” JHEP **1111**, 084 (2011) [arXiv:1105.2024 [hep-th]], with M. Spradlin.
53. “The Soft-Collinear Bootstrap: N=4 Yang-Mills Amplitudes at Six and Seven Loops,” JHEP **1203**, 032 (2012) arXiv:1112.6432 [hep-th], with J. L. Bourjaily, A. DiRe, A. Shaikh, M. Spradlin.
54. “All Two-Loop MHV Amplitudes in Multi-Regge Kinematics From Applied Symbology,” Phys. Rev. D **85**, 085019 (2012) arXiv:1112.6365 [hep-th], with A. Prygarin, M. Spradlin, C. Vergu.
55. “On Feynman rules for Mellin amplitudes in AdS/CFT,” JHEP **1205**, 129 (2012) arXiv:1112.0305 [hep-th], with D. Nandan, C. Wen,

56. “Mellin Amplitudes for Dual Conformal Integrals,” JHEP **1208**, 072 (2012) arXiv:1203.6362 [hep-th], with M. F. Paulos, M. Spradlin.
  57. “Star Integrals, Convolutions and Simplices,” JHEP **1305**, 105 (2013) arXiv:1301.2500 [hep-th], with D. Nandan, M. F. Paulos, M. Spradlin.
  58. • “Motivic Amplitudes and Cluster Coordinates,” JHEP **1401**, 091 (2014), arXiv:1305.1617 [hep-th], with J. Golden, A. B. Goncharov, M. Spradlin, C. Vergu.
  59. “Cluster Polylogarithms for Scattering Amplitudes,” J. Phys. A **47**, no. 47, 474005 (2014) arXiv:1401.6446 [hep-th], with J. Golden, M. F. Paulos, M. Spradlin.
  60. • “Subleading soft theorem in arbitrary dimension from scattering equations,” Phys. Rev. Lett. **113**, no. 10, 101601 (2014) arXiv:1404.7749 [hep-th], with B. U. W. Schwab.
  61. “Double Soft Theorems in Gauge and String Theories,” JHEP **1507** (2015) 095 arXiv:1504.05559 [hep-th], with C. Wen and M. Zlotnikov.
  62. “Hedgehog Bases for  $A_n$  Cluster Polylogarithms and An Application to Six-Point Amplitudes,” JHEP **1511**, 136 (2015) arXiv:1507.01950 [hep-th], with D. Parker, A. Scherlis, M. Spradlin.
  63. “Landau Singularities and Symbology: One- and Two-loop MHV Amplitudes in SYM Theory,” JHEP **1603**, 069 (2016) arXiv:1512.07909 [hep-th], with T. Dennen and M. Spradlin.
  64. “Landau Singularities from the Amplituhedron,” submitted to JHEP, arXiv:1612.02708 [hep-th], with T. Dennen, I. Prlina, M. Spradlin, S. Stanojevic.
  65. “A Supersymmetric SYK-like Tensor Model,” submitted to JHEP, arXiv:1612.03851 [hep-th], with C. Peng, M. Spradlin.
- d. Conference Proceedings*
66. “On domain wall in MQCD,” *Prepared for NATO Advanced Study Institute on Strings, Branes and Dualities, Cargese, France, 26 May - 14 Jun 1997.*
  67. “Holography for coset spaces,” *Prepared for NATO Advanced Study Institute: TMR Summer School on Progress in String Theory and M-Theory (Cargese 99), Cargese, Corsica, France, 24 May - 5 Jun 1999*
  68. “Yang-Mills amplitudes from twistor string theory,” *Prepared for AMS - IMS - SIAM Summer Research Conference on String Geometry, Snowbird, Utah, 5-11 Jun 2004,* with R. Roiban, M. Spradlin.
  69. “Yang-Mills Amplitudes and Twistor String Theory,” *In the Proceedings of 9th Workshop on Non-Perturbative Quantum Chromodynamics, Paris, France, 4-8 Jun 2007, pp 03.*

70. “Multigluon Amplitudes and AdS/CFT,” *In the Proceedings of Quarks-2008 International Workshop of High Energy Physics, Moscow, Russia, May 08.*  
*d. Non-Refereed Articles*

71. “Domain wall in MQCD and supersymmetric cycles in exceptional holonomy manifolds,” arXiv:hep-th/9710120.

72. “Near anti-de Sitter geometry and corrections to the large N Wilson loop,” arXiv:hep-th/9803220.

73. “Discreteness in deSitter space and quantization of Kaehler manifolds,” arXiv:hep-th/0101176.

74. “Holography for coset spaces and noncommutative solitons,”  
Harvard University, Ph. D. thesis.

*g. Invited Lectures and Seminars*

Presented 100+ lectures at scientific meetings, schools and universities.

1. Third workshop on String Theory and Gender, Southampton, UK, Mar. 17
2. String Theory and Scattering Amplitudes workshop, Simons Center, Jan. 17
3. New Horizons in Twistor theory, Oxford, UK, Jan. 17
4. School and Workshop on Amplitudes in Beijing 2016, Beijing, Oct. 16 (declined)
5. New formulations for scattering amplitudes workshop, Munich, Sep. 16 (cancelled)
6. Workshop on Current Themes in High Energy Physics and Cosmology, Niels Bohr Institute, Copenhagen, Aug. 16
7. Nordita program on Aspects of Scattering Amplitudes, Stockholm, Jun. 16
8. Isaac Newton Institute for Mathematical Sciences program on Gravity, Twistors and Amplitudes, Cambridge, UK, Jun. 16
9. Flat Holography workshop, Simons Center, Apr. 16
10. MHV @ 30 Workshop, Fermilab, Mar. 16
11. Hidden symmetries and integrability methods in Super-Yang-Mills theories and their string duals workshop, Montreal, Aug. 15
12. Lectures at the International Summer School on Theoretical Problems of Physics of Fundamental Interactions, Zelenogorsk, Russia, Jul. 15
13. Amplitudes, Motives and Beyond workshop, Mainz, Jun. 15



14. Miami 2014, Miami, Dec. 14
15. Grassmannian Geometry of Scattering Amplitudes workshop, Caltech, Nov. 14
16. New geometric structures in scattering amplitudes workshop, Oxford, Sep. 14
17. CERN, Aug. 2014
18. Integrable Structures in Scattering Amplitudes workshop, Durham, Apr. 14
19. Yale University, Apr. 14
20. Brandeis University, Oct. 2013
21. Queen Mary College, London, Jun 13
22. Humboldt University, Berlin, May 13
23. Niels Bohr Institute, Copenhagen, May 13
24. Zurich Theoretical Physics Colloquium, Apr. 13
25. Amplitudes 2013, Tegernsee, Germany, Apr. 13
26. CERN Theory Colloquium, Nov. 12
27. String-Math 2012, Bonn, Germany, Jul. 12
28. Conference " $\mathcal{N} = 4$  Super Yang-Mills Theory, 35 Years After", Caltech, Apr. 12
29. Isaac Newton Institute Workshop on Scattering Amplitudes, Cambridge, UK, Apr. 12
30. Northeast Conference for Undergraduate Women in Physics, Yale, Jan.12
31. Miami 2011, Florida, Dec. 11
32. Amplitudes 2011, Michigan, Nov. 11
33. INT workshop "Frontiers of QCD," Seattle, Sep. 11
34. Harvard University, Sep. 11
35. Strings 2011, Uppsala, Sweden, Jun. 11
36. KITP, Santa Barbara, May 11
37. Miami 2010, Florida, Dec. 10
38. 40th International Symposium Ahrenschoop on the Theory of Elementary Particles, Berlin, Aug. 10
39. Amplitudes 2010, London, May 10

40. Miami 2009, Florida, Dec. 09
41. Miami 2008, Florida, Dec. 08
42. “Gauge Theory and String Theory” workshop, Zurich, Jul. 08
43. “Quarks-2008” international workshop on high energy physics, Moscow, May 08
44. GEOMAP lectures by a distinguished foreign scientist in Niels Bohr Institute, University of Copenhagen, Apr. 08
45. New York University, Mar. 08
46. Miami 2007, Florida, Dec. 2007
47. Brandeis University, Oct. 2007
48. London Mathematical Society Symposium “Twistors, Strings and Amplitudes”, Durham, Aug. 2007
49. New England Particle Physics Student Retreat, Cape Cod, Aug. 2007
50. Workshop “Twistors, Perturbative Gauge Theories and Superstrings,” Munich, Jun. 2007
51. Ninth Workshop on Non-Perturbative Quantum Chromodynamics, Paris, Jun. 2007
52. Harvard University, Jan. 2007
53. Conference “Is  $N=8$  Supergravity Finite?” UCLA, Dec. 2006
54. Conference “Twistors, Strings and Gauge Theory,” Perimeter Institute, Sep. 2006
55. Institute for Advanced Study, Mar. 2006;
56. Brown University, Feb. 2006
57. QMUL Workshop “From Twistors to Amplitudes”, London, Nov. 2005
58. Rutgers University, Nov. 2005
59. MIT, Oct. 2005
60. International Spring School on String Theory, Hangzhou, China, May 2005
61. University of California, Davis, Mar. 2005 (math)
62. University of California, Davis, Apr. 2005 (physics)
63. Cornell University *Colloquium*, Mar. 2005
64. University of Texas, Austin *Colloquium*, Mar. 2005

65. University of Maryland, Mar. 2005
66. Stony Brook University, Mar. 2005
67. University of California, San Diego, Feb. 2005
68. University of California, Irvine, Feb. 2005
69. McGill University *Colloquium*, Jan. 2005
70. Cornell University, Jan. 2005
71. University of Illinois, Urbana-Champaign, Jan. 2005
72. DESY, Germany, Jan. 2005
73. Saclay, France, Jan. 2005
74. University of Amsterdam, Jan 2005
75. University of Rochester *Colloquium*, Dec. 2004
76. University of Michigan, Dec. 2004
77. Stony Brook University, Dec. 2004
78. University of Washington, Nov. 2004
79. Ohio State University *Colloquium*, Nov. 2004
80. KITP conference and program "QCD and String Theory", Santa Barbara, Nov. 2004
81. University of Chicago, Oct. 2004
82. University of Rochester, Oct. 2004
83. Perimeter Institute, Canada, Oct. 2004
84. University of Illinois, Urbana-Champaign, Sep. 2004
85. University of Michigan, Sep. 2004
86. Kavli Institute for Theoretical Physics, Santa Barbara, Sep. 2004
87. String Field Theory Camp, Banff International Research Station, Canada, Jul. 2004
88. Modern Trends in String Theory, Portugal, Jun. 2004
89. Harvard University, Apr. 2004
90. University of British Columbia, Vancouver, Canada, Apr. 2004
91. Ohio State University, Apr. 2004

92. Kavli Institute for Theoretical Physics, Santa Barbara, Mar. 2004
93. University of California, San Diego, Nov. 2003
94. Strings 2003, Kyoto, Jul. 2003
95. University of North Carolina/Duke University, Feb. 2003
96. University of Texas, Feb. 2003
97. Princeton University, Nov. 2002
98. University of Southern California, Oct. 2002
99. Kavli Institute for Theoretical Physics, Santa Barbara, Sep. 2002
100. Aspen Center for Physics, Aug. 2002
101. Cargese Summer School “Progress in String Theory and M-theory,” Jun. 2002
102. Harvard University, May 2002
103. University of Pennsylvania, Dec. 2001
104. Princeton University, Dec. 2001
105. Harvard University, Sep. 2001
106. Stanford University, Nov. 2001
107. Kavli Institute for Theoretical Physics, Santa Barbara, Nov. 2001
108. California Institute of Technology, Nov. 2001
109. University of Chicago, Oct. 2001
110. Les Houches Summer School, Aug. 2001
111. LPTHE, University Paris 6, Paris, Jul. 2001;
112. Brown University, Feb. 2001
113. University of British Columbia, Vancouver, Canada; Apr. 2000
114. Simon Fraser University, Vancouver, Canada, Apr. 2000;
115. Harvard University, Mar. 2000
116. NATO ASI ”Quantum Geometry”, Akureyri, Iceland, Aug. 1999
117. LPTHE, University Paris 6, Paris, Jul. 1999
118. Harvard University, May 1999

119. Ecole Normale Supérieure–Jussieu, Paris; Jan. 1998
120. Ecole–Polytechnique, Paris; Jan. 1998
121. LPTHE, University Paris 6, Paris; Dec. 1998
122. L. D. Landau Institute for Theoretical Physics, Jan. 1998, Mar. 1998, Jan. 1999, Sep. 1999
123. Moscow State University, Physics Department, Mar. 1997, Apr. 1998, Jan. 1999
124. Student Conferences in Joint Institute of Nuclear Research, Dubna, Mar. 1997, Mar. 1998
125. Steklov Mathematical Institute, Moscow, Jan. 1997

## 7. Research Grants

### Current Grants

1. Simons Investigator, Simons Foundation, total award \$660,000, 2015-present
2. Department of Energy Grant DE-SC0010010 *Program in Theoretical High Energy Physics*, Co-PI with J. Fan, A. Jevicki, D. Lowe, M. Spradlin and C. Tan, total award \$1,380,000, 2016-2019
3. Early Career Research Award, Department of Energy, total award \$750,000, 2011-2016
4. Sloan Research Fellowship, Alfred P. Sloan Foundation, total award \$50,000, 2011-2015
5. Simons Fellowship in Theoretical Physics, total award \$107,660, 2012-2013
6. Career Development Award, NSF ADVANCE Program, Brown University, total award \$15,000, 2009-2011
7. National Science Foundation CAREER Award PHY-0643150 *QCD and String Theory*, sole PI, total award \$399,995, 2007-2012
8. Department of Energy Grant DOE DE-FG02-91ER40688 *Research in Theoretical Physics*, Co-PI with A. Jevicki, D. Lowe and C. Tan, 2007-2008: \$328,000, 2008-2009: \$318,500, 2009-2010: \$340,000, 2010-2011: \$340,000
9. National Science Foundation PHY-0714747 *Northeast Regional String Theory Conference Program*, co-PI with D. Lowe and M. Spradlin, total award \$5,000, 2007-2009

## 8. Service and Outreach

### i. To the University

Graduate and Masters Students Advisor, Physics department, Brown, University, 2016-2017

Undergraduate Admissions, Brown University, physics files reader, 2013-present

Thesis Examination Committee for Junggi Yoon, 2016

Preliminary Examination Committee for Atreya Chatterjee, 2016

Graduate and Undergraduate Students Advisor, Physics department, Brown University, 2013-2016

Colloquium Committee Chair, Physics department, Brown University, 2015-2016

High Energy Theory Seminars and Journal Clubs Organizer, Physics department, 2015-2016, 2006-2012

Participated in Women in Science and Engineering events in Brown, such as mentoring session Jan. 2015; lunch with undergraduate physics majors May 2015

High Energy Theory Search Committee, Physics department, Brown, 2014-2015

Curriculum Committee, Physics department, Brown University, 2009-2012

Publication and Outreach Committee, Physics department, Brown University, 2006-2009, 2011-2012, 2013-2014

Colloquium Committee, Physics department, Brown University, organized several colloquia per year, 2006-2012

Co-organized the Panel "Women in Physics", Meeting of The Division of Particles and Fields of the American Physical Society, DPF 2011, Brown, Aug. 2011

Participated in "Lunch with Female Graduate Students," Brown, Feb. 2010, Nov. 2010

Participated in the Panel "Path to Science" at Brown Summer Program for High School students, Jun. 2009, Aug. 2010

Participated in Brown Physics Department outreach program to launch the "Science Kids Program" in Providence Community Preparatory School, by sending PhD students to lead Friday science club, 2008-2010

Thesis Examination Committee for Ines Anecito, Apr. 2009

Preliminary Examination Committee for Monica Pangilinan, Mar. 2009

Preliminary Examination Committee for Aram Avetisyan, Feb. 2009

Preliminary Examination Committee for Kewang Jin, Mar. 2008

Thesis Examination Committee for Aristomenis Donos, Apr. 2007

Participated in Women and Science and Engineering Event "Meet My Professor"

Prepared problems for graduate qualifying exam, 2006-present

Suggested and taught a new undergraduate course in Brown "General Relativity for Undergraduates"

ii. To the Profession

Referee for NSF, ERC, DOE grant proposals, 2006-present

Referee for Phys.Rev.D, JHEP, Nucl.Phys.B, 2006-present

Advisory committee, Amplitudes 2018, SLAC, 2018

DOE High Energy Theory Panel, 2016

Co-organizer MHV @ 30: Amplitudes and Modern Applications, Fermilab, Mar. 2016

Co-organizer of AndyFest: A Celebration of the Science of Andrew Strominger, Harvard, July 2015

Assessment committee for associate professorship in Niels Bohr Institute, University of Copenhagen, 2014-2015

Co-organizer of the *New England String Meetings*, Nov. 2006, Nov. 2007 and Oct. 2008, Apr. 2010, Nov. 2011, Nov. 2014, Nov. 2015

Co-organizer of CERN Theory Institute on Scattering Amplitudes, with J. Drummond, H. Johansson, N. Lambert, M. Spradlin, Jul. 2013

Session co-organizer at the *Twelfth Workshop on Non-Perturbative QCD*, Paris, Jun. 2013

Co-organizer of the IHES workshop "Amplitudes and Periods", IHES, Paris, with A. Goncharov, G. Korchemsky, M. Spradlin and P. Vanhove, Dec. 2012

Co-Organizer of the three month scientific program in Kavli Institute for Theoretical Physics, Santa Barbara, *The Harmony of Scattering Amplitudes: from QCD to Gravity*, together with N. Arkani-Hamed, Z. Bern, T. Gehrmann and F. Petriello, April 2011-June 2011

Co-editor of a special Journal of Physics A volume on Scattering Amplitudes, with R. Roiban, M. Spradlin

Session organizer at the *Ninth Workshop on Non-Perturbative QCD*, Jun. 2007

KITP High Energy Theory Seminar Organizer, 2003-2004, organized weekly seminars

Co-organizer and Chair of the Session "Current Trends in String Theory and Cosmology" at the Meeting of The Division of Particles and Fields of the American Physical Society, UC Riverside, Aug. 2004

## 9. Teaching

### Brown University

Spring 2007: PHYS2300, Quantum Field Theory I, Enrollment: 10+1  
Fall 2007: PHYS2320, Quantum Field Theory II, Enrollment: 8+2  
Spring 2008: PHYS2100, General Relativity and Cosmology, Enrollment: 16  
Fall 2008: PHYS1510, Advanced Electromagnetic Theory, Enrollment: 17  
Fall 2008, PHYS27100, Reading Course, Scattering Amplitudes in Field Theory, Enrollment: 6  
Spring 2009, PHYS1100, Introduction to General Relativity, Enrollment: 8+3, new class in physics department  
Fall 2009: PHYS1510, Advanced Electromagnetic Theory, Enrollment: 10  
Spring 2010: PHYS2100, General Relativity and Cosmology, Enrollment: 8  
Spring 2010, PHYS2710, Reading Course, Supersymmetry, Enrollment: 1  
Fall 2010: PHYS1510, Advanced Electromagnetic Theory, Enrollment: 23  
Fall 2010, PHYS2710, Reading Course, AdS/CFT, Enrollment: 2  
Fall 2011, PHYS0720, Methods of Mathematical Physics, Enrollment: 23  
Spring 2012, PHYS2100, General Relativity and Cosmology, Enrollment: 7+1  
Fall 2013, PHYS2320, Quantum Field Theory II, Enrollment: 8  
Spring 2014, PHYS2100, General Relativity and Cosmology, Enrollment: 19  
Fall 2014, PHYS2070, Advanced Quantum Mechanics, Enrollment: 13+1  
Spring 2015, PHYS2300, Quantum Field Theory I, Enrollment: 8  
Fall 2015, PHYS2070, Advanced Quantum Mechanics, Enrollment: 21+1  
Spring 2016, PHYS2300, Quantum Field Theory I, Enrollment: 13  
Spring 2016, PHYS2710, Reading Course, Scattering Amplitudes, Enrollment: 1  
Fall 2016, PHYS2070, Advanced Quantum Mechanics, Enrollment: 30  
Spring 2017, PHYS2300, Quantum Field Theory I, Enrollment: TBA

### Brown University graduate students

Chrysostomos Kalousios, 2006-2009 (Ph.D. 2009, postdoc at Humboldt University of Berlin)

Congkao Wen, 2008-2011 (Ph.D. 2011, KITP fellow, postdoc at Queen Mary, London, Caltech)

Dhritiman Nandan, 2009-2013 (Ph.D. 2013, postdoc in Humboldt University of Berlin)



Michael Zlotnikov, 2014-present

#### Brown University undergraduate students

Laurentiu Rodina '11, UTRA<sup>2</sup>, senior thesis (Princeton graduate school )

Sorawis Sangtawesin '11, UTRA, senior thesis (Princeton graduate school)

Matthew Dodelson '13, summer (Stanford graduate student)

Daniel Parker '15, UTRA, senior thesis (Berkeley graduate student)

Ittai Baum '16, UTRA

#### Brown University postdoctoral researchers supported

Aaron Simons, 2007-2008 (to New York)

Ari Pakman, 2008-2011 (to Columbia)

Cristian Vergu, 2008-2011 (to ETH Zurich)

Ilios Messamah, 2009-2011 (to South Africa)

Klaus Larjo, 2011–2012 (to Goldman Sachs)

Alex Prygarin, 2011–2012 (to Israel)

Miguel Paulos, 2012-2014 (to CERN)

Burkhard Schwab, 2013-2015 (to Harvard)

Tristan Dennen, 2015-2016 (to Google)

James Stankowicz, 2016-present

#### Harvard University

Fall 1998: Undergraduate Phys 153, Electrodynamics, Teaching Assistant

Fall 1999, 2000: Graduate Phys 210, General Theory of Relativity, Teaching Assistant

Fall 2001: Undergraduate Phys 284, Group Theory in Physics, Teaching Assistant

#### Moscow, High School

Fall 1995–Spring 1997: Geometry, Instructor, Physics-mathematics MIPT  
correspondence High School #2, Moscow